

**In the Abstract:**

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## **ABSTRACT OF THE DISCLOSURE**

A method and device for operating MIMO air interfaces in mobile communications systems, according to which a radio signal is transmitted by a transmitting device via a MIMO channel comprising a number of  $m$  subchannels and is received by a receiving device having  $n$  antennas. Different polarizations are assigned to the signals to be transmitted on the subchannels, and the signals are supplied to a common antenna.